

Predictive Control of Power Converter and Electrical Drive

Miss. Ankita D. Dhawankar¹ and Dr. U. E. Hiwase²

PG Student, Electrical Engineering Department, Priyadarshini College of Engineering, Nagpur, India¹

Assistant Professor, Electrical Engineering Department, Priyadarshini College of Engineering, Nagpur, India²

Abstract: Controlling power electronic converters is a very appealing use of model predictive control (MPC). In order to describe the current state of this control method and analyze the new trends and challenges it brings when used in power electronic systems, the goal of this study is to present and debate the most recent breakthroughs in MPC for power converters and drives. The prediction model, the cost function, and the optimization algorithm are the three crucial components of MPC methods, which are revisited in this study together with the MPC operating principle. The report provides information on the many solutions suggested by the academic and industrial groups while summarizing the most recent research on these components

Keywords: Power Factor Controller, Boost Converter, Current Quality, Power Electronics Circuits.

REFERENCES

- [1] P. Cortes, G. Ortiz, J. I. Yuz et al., "Model predictive control of an inverter with output LC filter for UPS applications," IEEE Transactions on Industrial Electronics, vol. 56, no. 6, pp. 1875–1883, June 2009.
- [2] P. Cortés, J. Rodríguez, D. E. Quevedo, and C. Silva, "Predictive current control strategy with imposed load current spectrum," IEEE Transactions on Power Electronics, vol. 23, no. 2, pp. 612–618, March 2008.
- [3] P. Cortés, J. Rodríguez, P. Antoniewicz, and M. Kazmierkowski, "Direct power control of an AFE using predictive control," IEEE Transactions on Power Electronics, vol. 23, no. 5, pp. 2516–2523, September 2008.
- [4] Diaz-Gonzalez F, Sumper A, Gomis-Bellmunt O, et al. "Energy management of flywheel-based energy storage device for wind power smoothing," Applied Energy, vol. 110, pp. 207-219, 2013.
- [5] H. Miranda, P. Cortés, J. I. Yuz, and J. Rodríguez, "Predictive torque control of induction machines based on state-space models," IEEE Transactions on Industrial Electronics, vol. 56, no. 6, pp. 1916–1924, June 2009.

BIOGRAPHY



I , Miss. Ankita D. Dhawankar, a students of Post graduate program in Engineering at Priyadarshini college of Engineering , Nagpur (Maharashtra)